



Purifilter™

Diesel Particulate Filter (DPF)

VERIFIED PRODUCT



Urban Buses

School Buses

Highway Trucks

Off-road Vehicles



*ECS Purifilters feature
a precious coating
catalyst on a Silicon
Carbide filter for
exceptional
regeneration
performance and
durability*

Today's Leading Technology for Tomorrow's Future

Purifilter™ – How does it work?

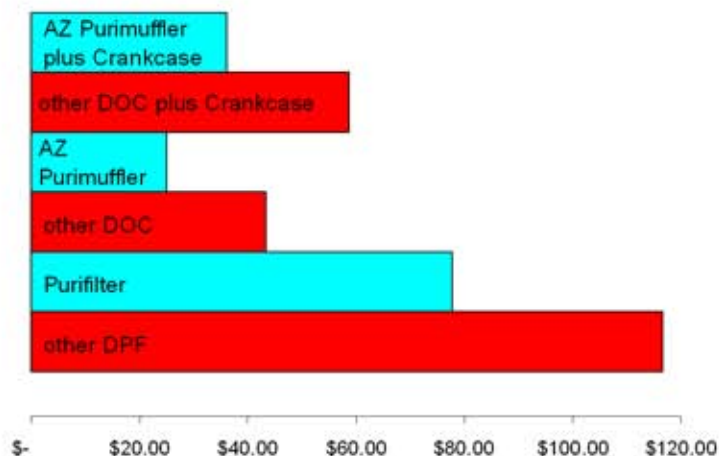
The Silicon Carbide filter substrate is formed in a honeycomb design; alternating cells are open on one end and plugged at the outlet end. As the exhaust flow enters the open inlet cells, it is forced to pass through the micro-porous walls to the outlet cells, filtering the diesel particulate from the exhaust.

The filter substrate is coated with a proprietary catalytic layer to reduce soot combustion temperatures to a level within the normal exhaust temperature range of diesel engines. Purifilter displays regeneration balance points between 2800C and 3250C, varying with both vehicle engine and application. Continuous passive filter regeneration occurs during a vehicle duty cycle when the exhaust temperatures are above 2800C for more than 25% of the time. The catalyst also serves to oxidize >90% of carbon monoxide and hydrocarbons.

Why Silicon Carbide?

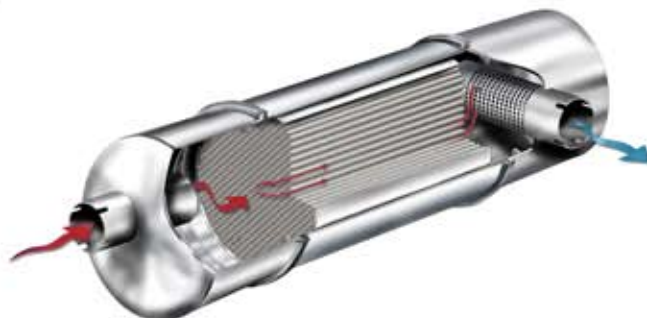
Silicon Carbide filter substrates have higher thermal conductivity than other traditional ceramics such as cordierite, providing superior thermal shock tolerance in the event of severe regeneration events. Silicon Carbide filter substrates also have extremely low chemical reactivity with lube ash and fuel additives, as well as superior noise attenuation that is comparable to high grade mufflers.

Cost per % of Emissions Reduced



ECS Purifilters- Designed for your Application

Purifilter models are available in 5 different particulate filter muffler types. The modular design allows for 360° rotation of the muffler inlet and outlet sections to provide the greatest range of fit. A backpressure monitor kit is provided with each Purifilter.



Urban Buses

Purifilter performance on a 1996 DDC Series 50 urban bus engine over the US EPA Highway FTP cycle depict these results, PM reduced by 89%, HC reduced by 86%, and CO reduced by 73%. The Purifilter has been verified for Urban Bus applications under the Energy Saving Trust Vehicle Certification Agency of the United Kingdom.

Highway Trucks

The Purifilter is suitable for a variety of truck applications. The passively regenerating Purifilter is robust enough to handle applications including refuse collection, fuel haulage trucks and other delivery vehicles. With both horizontal and vertical mounting options, the Purifilter can be made to fit in almost any vehicle.

Off-Road

The Purifilter has been certified under the Swedish Environmental Zones: Off-Road Engines Program. Results obtained from a Perkins 1004 engine over the ISO 8178 Cycle show that PM was reduced by 91%, HC by 96% and CO by 99%. Off-Road vehicles suited to the Purifilter include construction vehicles, mining vehicles, and other heavy industrial machines.

EPA Verified Results	AZ Purimuffler plus Crankcase	Other DOC plus crankcase	AZ Purimuffler	Other DOC	Purifilter	Other DPF
PM Reduction	40%*	25-33%	40%	20-26%	90%	60%
Cost without installation**	\$1700	\$1700	\$1000	\$1000	\$7000	\$7000
Cost per % PM Reduction	\$36.17	\$58.62	\$25.00	\$43.48	\$77.78	\$116.67

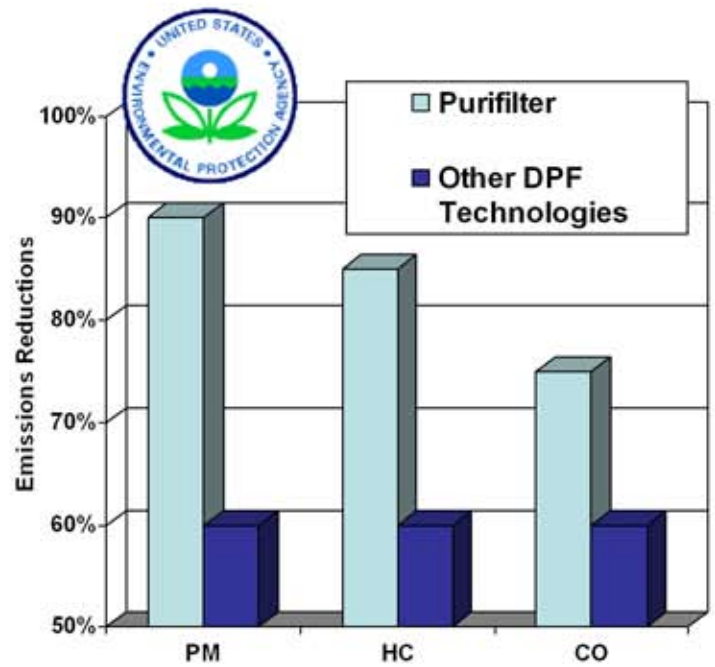
*Not yet verified
** Actual costs will vary depending on unit configuration and sizing

Verified Purifilter Performance

The U.S. Environmental Protection Agency (EPA) has verified the ECS Purifilter under the Voluntary Retrofit Program. The verification applies to all highway diesel engines not equipped with exhaust gas recirculation in the medium heavy duty, heavy duty, and urban bus categories built from 1994 through 2003.

Under the EPA verification, the ECS Purifilter, when used with ultra low-sulphur diesel, has been assigned emission reduction values of 90% for particulate matter (PM) 85% for hydrocarbons (HC), and 75% for carbon monoxide (CO). The Purifilter emission reduction values are substantially higher than other previously verified competitive products that have emissions credit values of PM: 60%, HC: 60%, and CO: 60%.

The California Air Resources Board (ARB) has also verified the Purifilter for specific 1994 through 2003 model year diesel engines used with on-road applications operating on ultra low sulfur diesel fuel. All of these engines are four-stroke, medium heavy duty and heavy duty diesel engines, including turbo-charged or naturally aspirated, mechanically or electronically injected, and are not equipped with exhaust gas recirculation. The Executive Orders include criteria for these verifications and a list of applications and engine families for which the device has been approved and can be found on the ARB website.



US EPA DPF Verified Emissions Reductions

Maintaining your Purifilter

Purifilters are virtually maintenance free when minimum duty cycle conditions are met. However, residual ash and engine wear metals will build up with use. The Purifilter requires ash removal once every 50,000 km (~30,000 miles), 12 months, or every 1000 hours, whichever occurs sooner. ECS recommends the use of the Comb iClean to maintain your filter.

Backpressure Monitor Kit

Every Purifilter is supplied with a Backpressure Monitor Kit which provides dependable protection for the engine against restricted exhaust flow. The unit can be mounted directly in the vehicle cab, or can be used to provide optional output to an auxiliary lamp or beeper. The unit will detect and signal when excessive exhaust restriction has occurred for more than 30 seconds. The warning lamp or output signal will remain on until the unit is reset.



Does your product/distributor do this?

Fleet Inspection - ECS distributors perform a full fleet inspection and evaluation. We ensure the right equipment, for the right vehicle, the first time.

Stainless Steel Products - Ensures that the entire device (from inlet to outlet) will not corrode or fail. The Purifilter is the only DPF made entirely of 304 grade stainless steel. This protects your true investment, the aftertreatment technology.

After Sales Support and Service - ECS offers a dedicated customer service 800 line as well as both technical service and customer service email accounts and phone contacts with a guaranteed response within 24 hours.

CUSTOMER SERVICE LINES North America

Canada and Eastern USA
Tel: 1-800-661-9963
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Fax: 1-905-853-5801

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Tel: 1-800-331-9247
Fax: 1-775-827-1670

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CombiClean™ - DPF Cleaning Station

The CombiClean is designed with health and safety in mind. The cleaning process is designed to safely and effectively clean the filter while minimizing exposure to harmful diesel particulate. The system allows the debris collected from the CombiClean to be disposed of following both municipal and environmental guidelines.



Purifilter is a Verified Emissions Reduction Technology

- ✓ Verified by the California Air Resources Board for 1994-2003 on-road diesel engines using ULSD
- ✓ Verified by the US EPA Voluntary Retrofit program for 1994-2003 on-road diesel vehicles
- ✓ Certified by the Swedish Environmental Zones: Off-road Engines program
- ✓ Tested and Approved under the Swiss VERT Program
- ✓ Approved by the Vehicle Certification Agency of the United Kingdom for on-road vehicles